

Multi-Messenger emission of TDEs

Thursday, 28 July 2022 12:00 (30 minutes)

The origins of the high-energy cosmic neutrino flux remain largely unknown. Last year, a high-energy neutrino was associated with the tidal disruption event (TDE) AT2019dsg by our group. I will present AT2019fdr, an exceptionally luminous TDE candidate, coincident with another high-energy neutrino detected by IceCube. I will present observations that further support a TDE origin of this flare. These include a bright dust echo and soft late-time X-ray emission. The probability of finding two such bright events in neutrino follow-up by chance is just 0.034%. Furthermore, we have evaluated several models for neutrino production and can show that AT2019fdr is capable of producing the observed high-energy neutrino. I will also present further evidence on accretion events accompanied by luminous dust echoes being connected to high-energy neutrinos, as we have found another event with such a signature coincident with a high-energy neutrino (AT2019aal). This reinforces the case for TDEs as neutrino sources.

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